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10/026,042

12/21/2001

John T. Coffey

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04/28/2005

TEXAS INSTRUMENTS INCORPORATED

P O BOX 655474, M/S 3999

DALLAS, TX 75265

EXAMINER

BAYARD, EMMANUEL

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,042

Applicant(s)

COFFEY, JOHN T.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4/1/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Patel et al US Re38, 456 E.

As per claim 1, Patel et al teaches a method for error recovery in a wireless network after a collision between a transmission and some narrowband interference, wherein the transmission is decoded using a sequential decoder, the method comprising: receiving (see fig.1 element 6 and col.10, lines 28-30) the transmission; decoding (see fig.2 element 38 or 41 or 47 and col.14, lines 29-56 and col.15, lines 1-25) the transmission; detecting the narrowband interference (see col.8, lines 53-60 and col.21, lines 38-45) in the transmission; an equalizer is the same as the claimed (reconfiguring a digital signal processor) (see fig.2 element 36 and col.13, lines 23-35 to take into account the narrowband interference; backtracking over previously decoded portions of the transmission (see fig.2 element **training signal** or loop-back); and decoding (see fig.2 element 37 or 38) the transmission using the reconfigured digital signal processor.

As per claim 2, Patel et al inherently includes wherein the transmission is performed a single symbol at a time, and wherein the receiving step comprises receiving the transmission a single transmitted symbol at a time.

As per claim 3, Patel et al inherently includes wherein the first decoding step comprises: computing a set of possible hypotheses based on the single transmission symbol; calculating a performance metric for each hypothesis in the set of possible hypotheses; and selecting a hypothesis corresponding to the best performance metric.

As per claim 4, Patel et al inherently includes wherein the backtracking step comprises backtracking over selected hypotheses.

As per claim 5, Patel et al inherently includes wherein the detecting step comprises detecting a burst of symbol errors.

As per claim 6, Patel et al inherently includes, wherein the detecting step comprises detecting a known sequence of interference types.

As per claim 7, Patel et al inherently includes wherein the detecting step comprises detecting a known sequence of interferences at a known sequence of frequencies.

As per claim 8, Patel et al inherently includes wherein the transmission occurs over a communications channel, and wherein the reconfiguring step comprises: obtaining a frequency response of the communications channel; determining the narrowband interference based on the frequency response; calculating a set of configuration coefficients based on the determined narrowband interference; and applying the calculated set of configuration coefficients to the digital signal processor.

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As per claim 9, Patel et al inherently includes wherein the backtracking step continues until the sequential decoder reaches a part of the transmission prior to the collision.

As per claim 10, Patel et al inherently includes, wherein the transmissions are performed in blocks, and wherein the backtracking step continues until the sequential decoder reaches the beginning of the transmission.

As per claim 11, Patel et al includes, wherein the digital signal processor comprises an adaptive equalizer (see fig.2 element 36).

As per claim 12, Patel et al includes, wherein the digital signal processor comprises an adaptive equalizer and a digital filter (see col.13, lines 23-35).

As per claim 13, Patel et al inherently includes wherein the digital filter is reconfigured to filter out the narrow band interference.

As per claim 14, Patel et al inherently includes wherein the adaptive equalizer is reconfigured to compensate for changes in the channel response due to the narrow band interference.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 15-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Agazzi et al U.S. Pub no 2001/0035994 A1.

As per claims 15 and 22, Agazzi et al teaches a radio receiver comprising: a receiver (see figs. 1, 5 and 23) inherently include the claimed (antenna) for receiving transmissions transmitted over a communications medium; an analog processing unit (see figs. 1, 5 and 23 elements 42, 86-92, 218 and page 2, paragraph [0040, 0041]) and page 4, paragraph [0063] coupled to the antenna, the analog processing unit containing circuitry to filter, demodulate, and amplify a received signal provided by the antenna; an analog-to-digital converter (see figs. 1, 5 and 23 elements 44, 90 and 222) coupled to the analog processing unit, the converter containing circuitry to convert the filtered, demodulated, and amplified received signal from the analog processing unit into a digital bit stream; a digital processing unit (see figs. 1, 5 and 23 elements 46, 100 and 224 and page 2, paragraph [0041] and page 4, paragraph [0068]) coupled to the analog-to-digital converter, the digital processing unit containing circuitry to digitally filter and adaptively equalize the digital bit stream; a first control and information line coupled to the digital processing unit, the first control and information (see fig.5 element 96 Fc) line providing configuration and operational information of the digital processing unit; a sequential decoder (see fig.5 element 102) coupled to the digital processing unit, the sequential decoder containing circuitry to decode a digital data stream from the digital bit stream; and a second control and information line (see fig.5 element fc and page 4, paragraph [0064]) coupled to the sequential decoder, the second control and

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information line providing configuration and operational information of the sequential decoder.

As per claim 16, Agazzi inherently teaches wherein the radio receiver receives transmissions within a frequency band of interest, and wherein the radio receiver further comprises an interference detection unit coupled to the digital processing unit and the sequential decoder, the interference detection unit containing circuitry to detect the presence of interference and errors within the frequency band of interest.

As per claim 17, Agazzi inherently teaches wherein the interference detection unit is a Bluetooth transmission detector.

As per claim 18, Agazzi teaches, wherein the radio receiver further comprises a buffer is the same as the claimed (memory) (see page 6, paragraph [0093] coupled to the digital processing unit and the sequential decoder, the memory containing pre-computed profiles of a plurality of different types of interference and errors.

As per claim 19, Agazzi inherently teaches wherein the pre-computed profiles may be loaded into the digital processing unit and the sequential decoder immediately upon detection of interference and errors.

As per claim 20, Agazzi inherently teaches wherein the radio receiver further comprises a buffer is the same as the claimed (memory) (see page 6, paragraph [0093]) memory coupled to the digital processing unit and the sequential decoder, the memory containing a set of updated coefficients for the digital filter and the adaptive equalizer.

As per claim 21, Agazzi inherently teaches wherein the set of updated coefficients for the digital filter and the adaptive equalizer is continually updated based

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on a measured channel response of the communications channel (see page 6, paragraph [0097]).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Agazzi US Pub 2001/0035997 A1 teaches a high-speed transmissions system.

Rubinstain et al U.S. patent No 6,088,368 teaches an Ethernet transport facility.

Hsu U.S. patent No 6,804,695 B1 teaches a method and apparatus for constraining tap coefficients.

Chen et al U.S. Patent No 6,665,355 B1 reaches a method and apparatus for pilot aided carrier acquisition.

Agazzi et al U.S. Pub 2004/0156431 A1 teaches a demodulator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

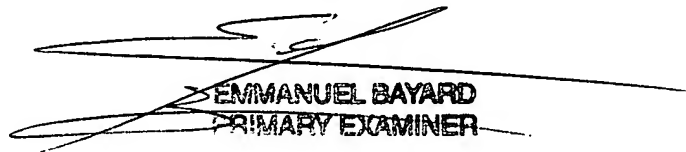
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2631

4/18/05



EMMANUEL BAYARD
PRIMARY EXAMINER